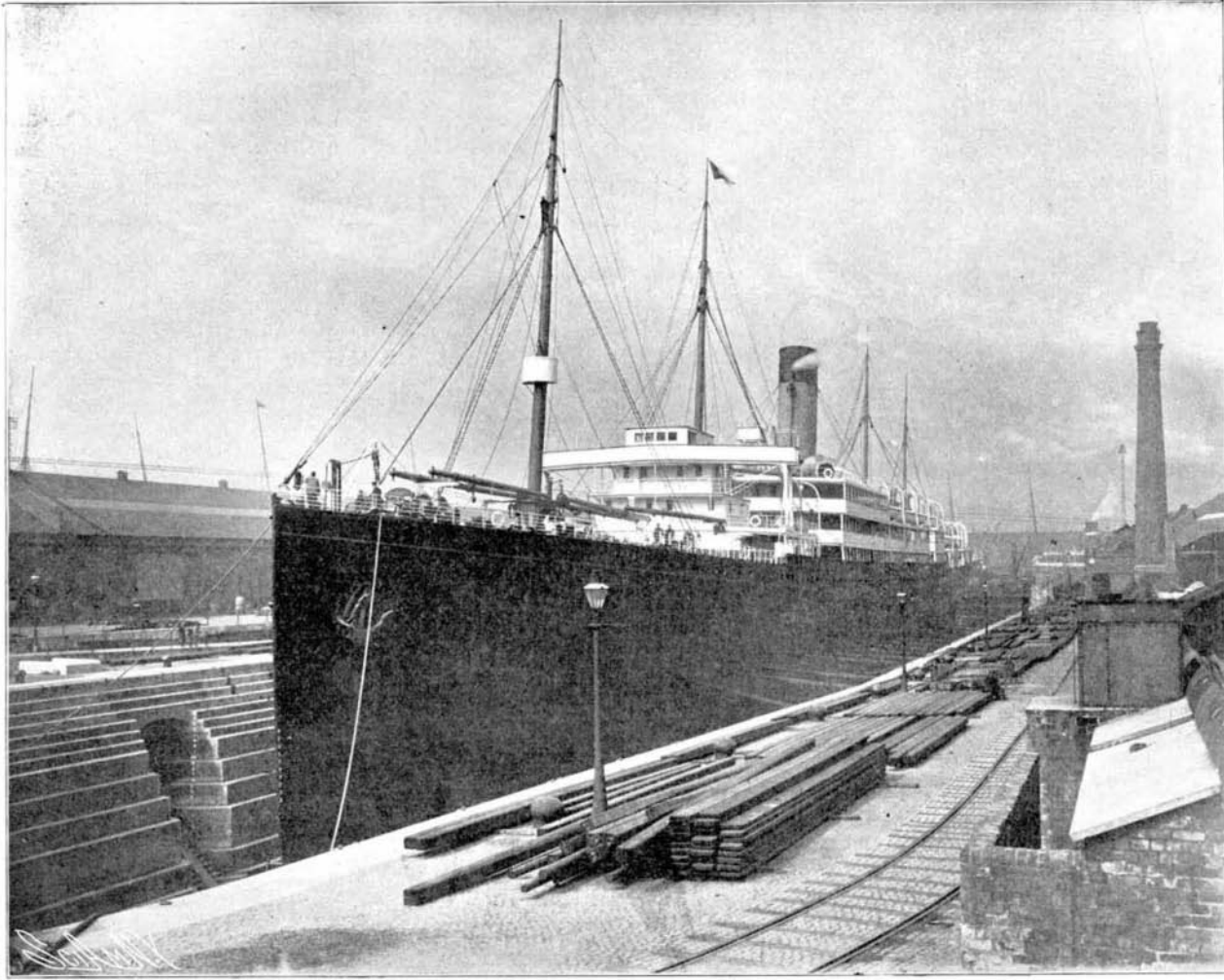


THE NEW LINER "ARABIC."

A notable addition to the fleet of great Atlantic passenger and cargo steamers is the "Arabic" of the International Mercantile Marine Company's White Star Line. The "Arabic" sailed from Liverpool on her maiden voyage on June 26, and reached New York after a passage of a little over seven days. The accompanying excellent photograph of the new steamship was made while she was in drydock at Liverpool shortly before starting on her first voyage. The "Arabic" is a representative of the type of Atlantic liner that seems to be becoming especially popular and profitable. In general her lines are like those of her giant sisters, the "Celtic" and "Cedric." She is excelled in size by these two vessels, which are of 20,000 and 21,000 tons respectively, by the 17,000-ton "Oceanic" of the same line and by two or three

of the swift German liners, but aside from these she is larger than any other vessel in the Atlantic trade. Her gross tonnage is 15,300; her length is 600 feet, her beam 65 feet, her depth 44 feet, and her cargo capacity 16,500 tons. In the design of the "Arabic" no effort toward attaining extreme speed was made. She was designed to make 16 knots, but on this her maiden trip she averaged over 17 knots for 24 hours, and was well over her contract speed for the whole voyage. She is equipped with twin-screws and two sets of quadruple-expansion engines of 10,000 horse power, and with her great cargo capacity is expected to be an exceptionally steady vessel. Her owners say that her engine power is ample to enable her to keep to her schedule requirements with thorough regularity. Her quadruple-expansion engines are arranged on the balance principle, and the vibration was scarcely noticeable. In the minor features of her construction and equipment the "Arabic" embodies a number of new and improved features. She carries a very complete elec-



Length, 600 feet; breadth, 65 feet; depth, 44 feet; cargo capacity, 16,500 tons; horse power, 10,000; speed, 17 knots.

THE NEW WHITE STAR LINER "ARABIC."

tric plant; her cabin staterooms are warmed by electric heaters, and she is ventilated throughout by electrically-driven fans. The very roomy staterooms, which are a conspicuous feature of the "Cedric" and "Celtic," are duplicated in the "Arabic." She has a continuous shade deck fore and aft, with three tiers of deck houses and two promenade decks above them.

after those of the new "Arabic." There are no open berths in the steerage, or third-class as it is now called, but the space is divided into two, three, and four-berth rooms, all thoroughly ventilated and kept as clean and well painted as the first-cabin quarters. The third-class passengers have a comfortable dining saloon, in which the tables are fitted with revolving

The first-class dining saloon is on the upper deck, and all the first-class accommodations are amidships. The second-class passengers—to whom more and more attention is being given in successive new Atlantic liners—have their quarters immediately aft of the first-class. The third-class passengers are provided for aft of the second-class, while there are also some third-class accommodations forward. Perhaps it is in the quarters assigned to third-class passengers that the greatest innovations are noticeable. When the reconstructed White Star liner "Majestic" returned to the Liverpool - New York service recently after an absence of more than a year, visitors who inspected her remarked that her third-class accommodations would have been a revelation of luxury to second-class travelers of no more than a decade ago. The "Majestic's" quarters were remodeled

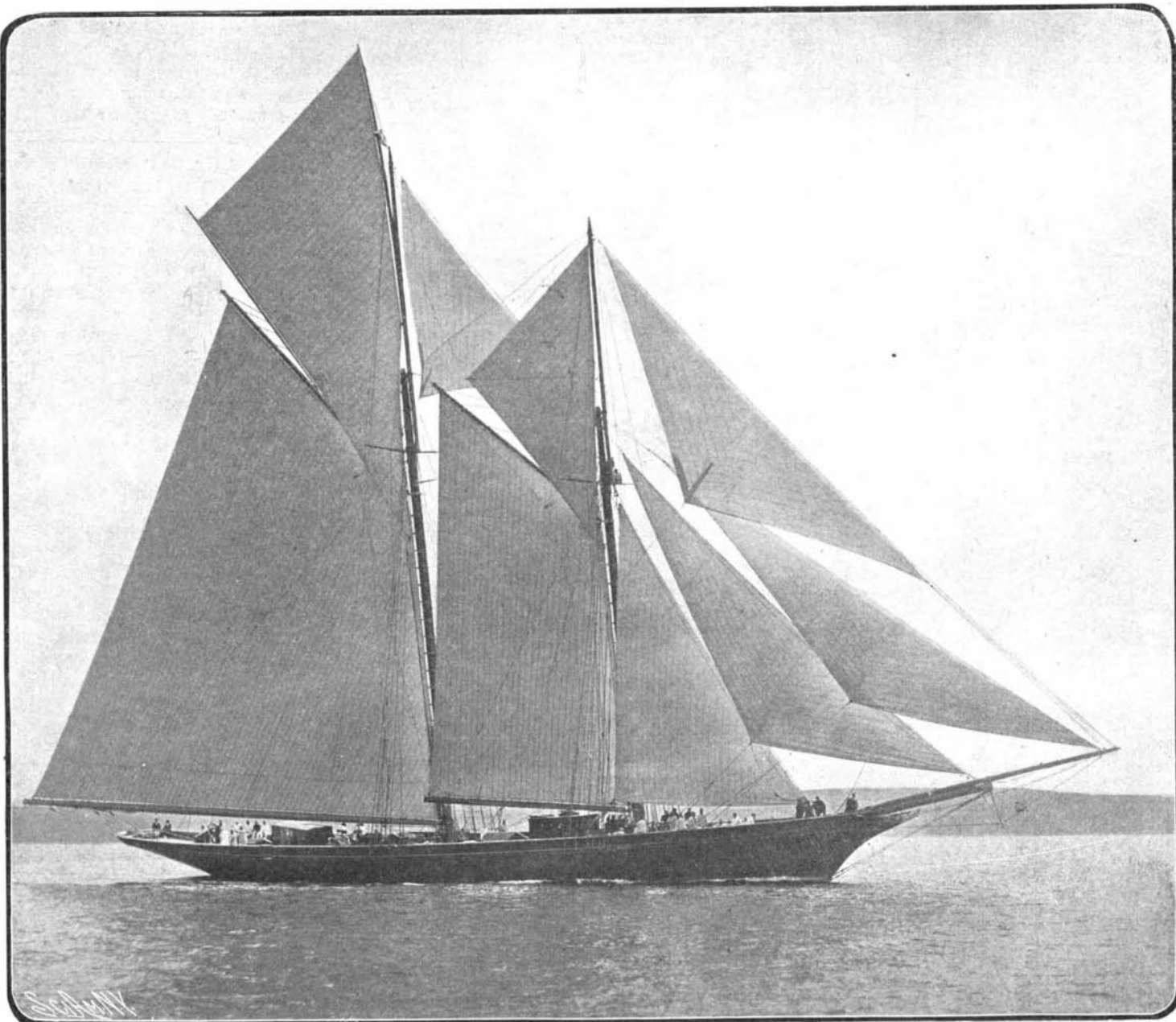
chairs quite after the accepted cabin fashion.

While the "Arabic" presents no striking departures in construction and equipment from her successful prototypes, the "Cedric" and "Celtic," she represents the steady advance in the direction of comfort, steadiness, and moderate speed which seems to be the trend of the times in big passenger ships. Like the other White Star ships, the "Arabic" was built in the Harland & Wolff yards at Belfast.

THE

"GLENIFFER,"
BY OUR GLASGOW
CORRESPONDENT.

Generally speaking, when a yacht owner or prospective owner sets out to break any of the designing or building records, he starts with a clear idea of what the appearance of the vessel is likely to be and with



Length on deck, 187 feet 6 inches; on waterline, 141 feet. Beam, 27 feet. Draught, 17 feet. Length from tip of boom to tip of bowsprit, 224 feet. Height from water to top of maintopmast, 141 feet.

"GLENIFFER," THE LARGEST AND FASTEST FORE-AND-AFT SAILING YACHT EVER BUILT. AVERAGE SPEED RECORDED FOR 100 KNOTS, WHEN REACHING, 16 KNOTS PER HOUR.



Fig. 1.—The Beer-Tap.



Fig. 2.—General View of the Automatic Restaurant.

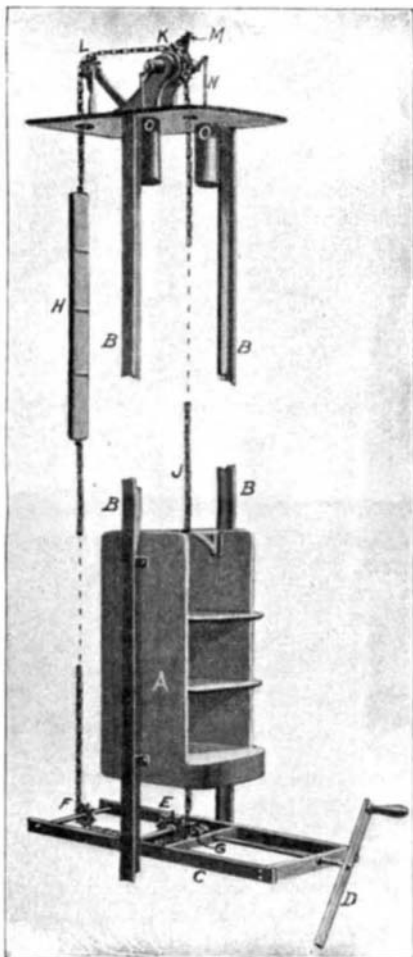


Fig. 3.—Details of the Elevator.



Fig. 4.—Buying a Cup of Coffee.



Fig. 5.—Removing a Purchased Dish.



Fig. 6.—A Kummel Cask.

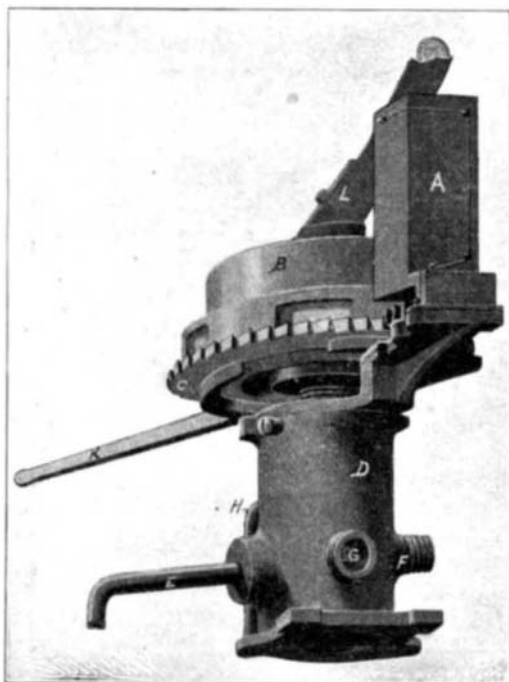


Fig. 7.—Details of the Automatic Valve.

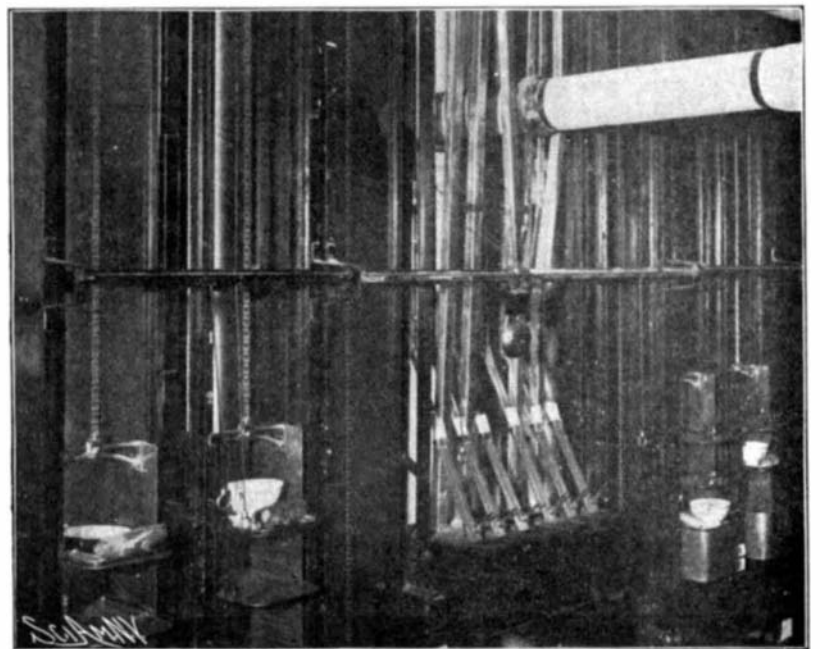


Fig. 8.—The Elevator and Coin Chutes.

THE AUTOMATIC RESTAURANT.—[See next page.]

at least some idea of the figure to which the cost of the contract is likely to run. The building of the schooner yacht "Gleniffer," the largest two-masted schooner ever built purely for pleasure, was, however, undertaken in a different fashion. Her owner, Mr. James Coats, Jr., of Ferguslie, Paisley, Scotland, takes his yachting on rather original lines. He has done much to further the nautical sport in Scotland, and something for the cause of international sport, for he was owner of the 10-tonner "Madge," the most successful British boat ever sailed in American waters. It is one of his peculiarities that he never sells a boat, and the result is that notwithstanding the generous manner in which he has presented steam and sailing yachts to many relatives and friends, he still stands in possession of over a dozen yachts, steam and sail. Next to the "Madge," which was laid up in America and allowed to rot after a phenomenally successful career, his best known boat was the cutter "Marjorie," which played a prominent part in British yachting twenty years ago. "Marjorie" was gradually outclassed, and when Mr. Coats decided to build again, he had lost his keen zest for racing and decided to procure a craft in which he could enjoy the maximum of comfort when cruising.

He figured out therefore the amount of accommodation which he required aboard, and commissioned Mr. George L. Watson to build him a boat which would provide it. So generous were his ideas in this direction, that the natural method of meeting them would have been to build one of the large steam yachts in which our millionaires now seek pastime. Mr. Coats is, however, old-fashioned enough to cherish a deeply-rooted distaste for the steamship, and his orders were that the new vessel should be canvas-driven. The fact that the building of a shapely hull round the generous accommodation which he had sketched would produce the largest sailing yacht ever built did not alter his plans, and the result was the production of the schooner "Gleniffer," which has been for some time the most notable yacht of the whole Clyde fleet.

The 90-footers built for "America" Cup racing are generally considered as going to the limit in sailing yachts, but these fall a long way short of the dimensions of this magnificent schooner. From figurehead to taffrail "Gleniffer" measures 187½ feet, over 50 feet longer than "Columbia." The beam of the schooner is 27 feet, and her draught 17 feet, while her measurement by the Thames rule works out at about 450 tons. It is in displacement that her extra bulk as compared to the Cup racers is specially apparent, for while the cutters are severely undercut below water, "Gleniffer" is comparatively long-keeled and deep-bodied—the very ideal of a vessel intended for cruising.

In general outline and in section, the yacht has a striking resemblance to the "Thistle," which was sent across the Atlantic in 1887 to race for the "America" Cup. The profile forward is almost identical, for in designing it Mr. Watson abandoned the modern spoon bow and went back to the more graceful clipper or swan-neck bow of ten or a dozen years ago. Above the water the stem shows distinctly hollow, but about the water-line it sweeps into a convex curve which is carried down into the lower keel plates. From the end of this curve the keel runs with little or no increase of draught back to the heel of the sternpost. The sternpost is less raked than has been the rule in recent productions, and it cuts at top through a fairly long and very graceful counter, which rises with a good deal of spring and gives an overhang aft of about 27 feet. The forward overhang measures about 16½ feet.

One hundred and fifty tons of lead is required as ballast to steady her against her enormous spread of sail, and this is carried inside, most of it being in one solid ingot. Compared with the yachts of modern design she looks high in the topsides, but this is accounted for by the fact that instead of the usual apology for a rail her decks are set round with a serviceable gunwale 2 feet 6 inches high. The deck has been kept as clear as possible, and is broken only by a small smoking lounge at the galley, which is situated amidships.

In the construction of the yacht nothing has been sacrificed for lightness or speed. The materials are all of the best procurable, and the scantlings are in every case in excess of what are demanded for the highest class at Lloyds. Under water the plates are overlapped and riveted in the usual way with a double row of rivets, but in the topsides the plates are butted and strapped inside, leaving a beautifully smooth surface. The elaborate scale upon which the fittings below are carried out gives the best possible proof that the yacht was designed primarily for comfort and convenience in cruising, and one advantage of the sailing yacht is shown in the fact that the "Gleniffer" has more spacious cabins and better accommodation than many steam yachts two or three times her size. A passage 3 feet 6 inches wide leads from the companion to the main saloon, a large and airy apartment which extends the whole breadth of the yacht amidships, and is so designed that it may be divided by curtains into

dining and drawing cabins or used as one big saloon. Aft of this, on the starboard side, are the owner's private apartments, consisting of library, sleeping cabin, and bathroom, all of these being airy, well-lit cabins of about ten feet square with seven feet of headroom throughout. Opposite these on the port side are guests' cabins, planned in somewhat similar style, and consisting of four cabins with bathrooms, cloakrooms and smokeroom adjoining. Aft of these again are two ladies' cabins, handsomely fitted and provided with everything necessary for the comfort of lady guests.

Forward of the main saloon are the officers' quarters—a snug little cabin for the skipper, and three others which give accommodation for the half dozen officers who assist in the command. Alongside these are the steward's pantry and storeroom, which communicate by means of a small hoist with the galley on deck.

The crew of thirty-four men is excellently housed in a commodious and airy forecabin. Under the cabin floor is a lower deck running the whole length of the vessel, with about five feet of headroom. Sails and all the lighter stores are carried here, while water and oil tanks, cables and heavier stores are carried under this again.

As might be anticipated from her great length and sail spread of 18,000 square feet, the "Gleniffer" has made some exceptionally fast passages when going free. Once, off the east coast of Ireland, she logged 16 knots an hour over a measured course of 100 miles from light to light; and last year under similar conditions off the Hebrides she made the same speed over a slightly shorter distance. This pace is probably the greatest ever attained by any ship carrying full sail in a moderate breeze.

THE AUTOMATIC RESTAURANT.

We have slot machines that sell us candy and chewing gum, slot machines that sell collar buttons, slot machines by which we can be weighed, and slot machines which set a phonograph or music-box in motion and soothe us with the latest popular airs while we wait in the railway station or ferry house. Now we have the automatic restaurant, a gigantic slot machine or combination of slot machines from which we can purchase food and drink.

To the American, who is now so accustomed to mechanical contrivances that he no longer is astonished by their performances, this automatic restaurant is but the logical development of the automatic vending machine. The wonder is that this idea is not of American, but of German, origin. Automatic restaurants have been a familiar sight in many of the more prominent European cities for the last nine years.

New York's restaurant, in principle, is very much the same as those of the German towns. It is fitted up much more elaborately, however. Its electric lights, its dazzling mirrors, and its resplendent marble outshine everything on Broadway. The average café which to the country visitor seems to be illuminated with extravagant splendor, is but a dismal place compared with it.

The man who walks into the automatic restaurant with the idea that he can sit down at a table and order what he likes from a waiter, will be sadly mistaken. There are no waiters in the usually accepted sense of that term. The two or three white-aproned men who nonchalantly roam around without apparently much to do are there not to serve meals, but to remove the empty dishes. You must serve yourself. You buy your portion of meat or soup, your glass of beer or wine, or your cup of coffee, and you carry what you have bought to your table. If you are in a hurry, you may stand and eat, and enjoy what is popularly known as a "perpendicular meal."

In describing the automatic restaurant, it may be well to divide its various appliances into three classes. The first class of machines sell hot food by means of coins and checks; the second dispense cold food (salads, desserts) by the use of coins alone; and the third sell liquids (beer, wine, coffee, whisky, liquors, etc.) by the use of coins alone.

The restaurant comprises two floors, or rather a floor and a basement. On the upper floor the patrons purchase what they desire; in the basement the food is cooked or otherwise prepared, and lifted to the floor above by means of elevators.

The operation of the elevators may best be explained by describing the process of purchasing food. The bill of fare is printed upon a board in which the slots are located. Each slot bears a reference letter. Opposite slot A, a small placard is pasted which gives the name of the particular dish to be purchased by dropping a coin in that slot. Similar legends are printed upon the placards pasted opposite slots B, C, D, etc.

After the desired dish has been selected, a coin of the proper denomination is dropped into the corresponding slot. A handle is pulled, which rings a bell in the basement, and signals the attendants. Simultaneously a brass check is delivered. The coin has dropped down a chute, which lies adjacent to the elevator and is held in place at the bottom by a retaining

device. By counting the number of coins as they lie side by side above the retaining device, the attendants know exactly how many dishes of that particular food are wanted. As each dish is served, the retaining device is released, so that a coin drops into a receptacle, leaving behind a number of coins corresponding to the number of dishes still to be served. The food, attractively served in neat chinaware, is placed on a silvered metal tray in one of the compartments of the elevator A (Fig. 3). The shaft of the crank D is rotated, and carries at its end a bevel gear G meshing with the bevel gear E. The shaft upon which the gear E is carried is provided with a sprocket wheel about which a chain J passes, which meshes with the sprocket F in the frame C, carrying the crank shaft, and likewise with the sprockets L and K in a frame at the upper end of the elevator. A counterweight H facilitates the raising and lowering of the elevator. After the silver tray has been placed in one of the compartments of the elevator A, the crank D is turned in order to raise the elevator to the floor above. The purchaser sees his dish as it lies in the elevator behind a glass partition; he cannot reach it, however, because it has been lifted somewhat above the discharge opening. Not until he has dropped his brass check into a second slot, bearing a reference letter corresponding to that of the coin slot, and pulled another handle, will the elevator descend sufficiently to enable him to obtain his purchase. After the elevator has descended, the food is removed in the manner shown in Fig. 5.

Here, one peculiarity in the slot mechanism of the automatic restaurant should be mentioned. Spurious coins, as well as coins of improper value, fail to operate the mechanism. An honest slot machine is probably as rare as an honest man. The automatic restaurant machines, however, are far more trustworthy than many a human being. Coins of improper value which have been erroneously inserted are returned. The purchaser is not cheated.

Cold foods, such as salads and desserts, are placed upon the elevators of another section and raised to the purchasing floor in full view, protected, of course, by glass partitions. In order to purchase what one desires, it is necessary simply to drop a coin in the slot and to pull a handle. The elevator then descends one step so that the particular salad or dessert can be withdrawn from the discharge opening just as in the previous case. No checks are here used, since the dishes are cold and the attendants below need not be informed of the particular kind of food desired.

The liquor-dispensing machines have for their most interesting feature a self-measuring valve by means of which an amount of liquor is dispensed which is the exact equivalent in quantity of the value of the money received. It is rather curious to observe that for a five-cent piece a glass of beer—no more and no less—runs out of the faucet. Kümmel, Benedictine, and other liqueurs are sold with like mechanical accuracy. The glasses are brimful; not a drop too much trickles out of the cask.

When a beer-cask is nearly emptied, a bell is automatically rung to call the attention of the attendants in the basement to its condition.

In Fig. 7, a general view of the automatic valve is presented. A is a box which contains registering mechanism, from the dial of which can be immediately ascertained exactly how many cups of coffee, glasses of beer, wine, whisky, or soda-water, as the case may be, have been sold by the particular machine in question. B is a money-chamber into which a coin drops after it has fallen through the chute L. C is a gear-wheel which meshes with a pinion operating the registering mechanism contained in the box A. As the gear wheel C is moved in response to the movement of the lever K, the registering mechanism in the box A will be actuated. D is a cylinder within which is a cone containing exactly the measure of the liquid to be sold. H is a drain-pipe from the cone. By operating the lever K, which is released as the coin enters the money chamber B, the cone is turned so that an opening with which it is provided may register with the outlet-pipe E, in order that the liquid may be discharged. F is the feed pipe.

How a glass of beer is bought is best shown in Fig. 1. The glasses are all hung on pegs on a marble panel above the slots. The purchaser removes one of these glasses, rinses it, if he likes, in an automatic sprinkling device especially provided for that purpose, places it beneath the tap, and puts his coin in the slot. He pulls the lever over, as far as it will go, and allows it to fly back. The beer flows out of the tap into his glass in just the right quantity.

The valve by which coffee is dispensed is exactly of similar construction; the cups, however, are disposed not on pegs, but in elevators similar to those by which food is raised. The coffee is kept hot by means of a vessel containing water, within which the coffee tank itself is contained.

The method of buying liquors or wine or soda-water is precisely the same as that which we have described in connection with the purchase of beer.

New York is by no means the first American city to